

The Impact of Data Strategy and Emerging Technologies on Business Performance

Subbarao Pothineni, Teradyne, USA*

ABSTRACT

This study investigates the intricate relationship between data strategy implementation, the adoption of emerging technologies, and business performance across diverse sectors. This comprehensive analysis of 228 cases reveals significant positive correlations between data strategy implementation and business performance, emphasizing the crucial role of data strategy in enhancing operational efficiency and gaining a competitive edge. However, the impact of adopting emerging technologies on business performance varies by sector, highlighting the need for a tailored approach to technology integration. Thematic analysis uncovers common challenges in data strategy implementation and technology adoption, offering valuable insights applicable to organizations across industries. This study provides a holistic perspective on data-driven transformations, yielding practical implications for organizations striving to navigate the complexities of modernization, and enhance their performance in an evolving business landscape.

KEYWORDS

Business Performance, Data Governance, Data Security, Data Strategy, Emerging Technologies

INTRODUCTION

In today's digital economy, data strategy and emerging technologies are becoming crucial factors that influence the performance of businesses (Rialti et al., 2018). As companies navigate an increasingly interconnected and data-driven world, their ability to harness the power of data and effectively leverage emerging technologies has emerged as a critical determinant of success.

A data strategy, in essence, refers to an organization's comprehensive plan for identifying, collecting, storing, managing, using, and analyzing its data (Rajpurohit, 2017). A well-crafted data strategy empowers businesses to transform raw data into actionable insights, enabling informed decision-making across all levels of the organization.

On the other hand, emerging technologies refer to novel technologies that are currently under development or will be developed over the next few years and have the potential to significantly influence society and business operations (Dwivedi et al., 2019). Emerging technologies encompass diverse innovations, including Artificial Intelligence (AI) like ChatGPT, which enables machines to mimic human cognitive functions and perform tasks like natural language processing, image recognition, and predictive analysis. The Internet of Things (IoT) facilitates

DOI: 10.4018/IJBSA.334022

*Corresponding Author

This article published as an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0/>) which permits unrestricted use, distribution, and production in any medium, provided the author of the original work and original publication source are properly credited.

the interconnection of various devices, creating vast networks of data-sharing objects, while blockchain technology offers decentralized and secure data management through distributed ledgers. These technologies hold immense promise in revolutionizing industries, streamlining processes, and creating new business models.

Given the increasing significance of data and technology in the business landscape, it is paramount to understand their role in shaping business performance. Numerous organizations are investing in data strategies and adopting emerging technologies to gain a competitive edge, improve operational efficiency, and enhance customer experience (Sharma et al., 2020). When strategically managed and combined with cutting-edge technologies, forward-thinking companies recognize that their data assets can unlock valuable insights, foster innovation, and drive sustainable growth.

However, despite the growing awareness of the importance of data strategy and emerging technologies, the empirical understanding of their impact on business performance remains limited. Many organizations need help implementing effective data strategies, including data quality, privacy concerns, and integrating disparate data sources. Additionally, adopting emerging technologies requires significant investment, skill gaps, and organizational change, presenting opportunities and obstacles for businesses seeking to leverage their potential benefits.

Therefore, this study aims to contribute valuable insights to academic literature and business practices by empirically investigating the impact of data strategy and emerging technologies on business performance. By delving into this relationship, the study seeks to uncover patterns, identify success factors, and understand the challenges organizations encounter on their journey toward data-driven and technology-enabled excellence.

This research's findings can help businesses improve strategic decision-making, guide resource allocation, and provide practical recommendations for businesses seeking to thrive in an increasingly data-centric and technology-driven landscape. As the business world continues to evolve, the insights gained from this study will be crucial in shaping the strategies and practices of forward-looking organizations that aim to stay at the forefront of their industries.

The primary objective of this research is to empirically investigate the impact of data strategy and emerging technologies on business performance. Specifically, the study aims to address the following research questions:

- How does data strategy influence business performance?
- What is the impact of emerging technologies on business performance?
- How does the interplay between data strategy and emerging technologies affect business performance?

LITERATURE REVIEW

In recent years, there has been growing interest in the relationship between data strategy and business performance, with many organizations recognizing the potential benefits of adopting a data-driven approach to decision-making. Data-driven decision-making involves collecting and analyzing data to identify patterns, trends, and insights that can inform strategic and operational decisions.

As companies seek to leverage their data assets to improve business performance, data strategy has become an increasingly important aspect of organizational strategy. The concept of data strategy refers to the plan or roadmap that outlines how an organization will collect, manage, store, and use data to achieve its goals and objectives (Chen et al., 2012). Rouse (2019) put it simply that data strategy is an action plan for achieving goals using data assets.

17 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage: www.igi-global.com/article/the-impact-of-data-strategy-and-emerging-technologies-on-business-performance/334022

Related Content

Pricing Strategies for Companies During the COVID-19 Pandemic

Lovely Chopra, Rohan Shareshtha Vermaand Pratap Chandra Mandal (2021).

International Journal of Business Strategy and Automation (pp. 1-19).

www.irma-international.org/article/pricing-strategies-for-companies-during-the-covid-19-pandemic/287111

The Role of Digital Touchpoints in the Five-Star Hospitality Customer Journey

Camille Zabjesky, Belem Barbosaand Sara Neves (2025). *Effective Marketing and Consumer Behavior Tactics for High-End Products* (pp. 131-166).

www.irma-international.org/chapter/the-role-of-digital-touchpoints-in-the-five-star-hospitality-customer-journey/380501

The Digital Renaissance of Hospitality: Workforce Mastery in the Smart Revolution

Vipan Raiand Amrik Singh (2026). *Smart Operations and Enhancing Guest Experience in the Hospitality Industry* (pp. 125-144).

www.irma-international.org/chapter/the-digital-renaissance-of-hospitality/384212

Influence of Policy Framework and Technology on Change Management in Selected Telecommunication Companies in Tanzania

Paulina C. Nataiand Juliana Mulaa Namada (2021). *International Journal of Business Strategy and Automation* (pp. 1-12).

www.irma-international.org/article/influence-of-policy-framework-and-technology-on-change-management-in-selected-telecommunication-companies-in-tanzania/287109

Applications of Blockchain Technology in Supply Chain Management

Siva Raja Sindiramutty, Noor Zaman Jhanjhi, Chong Eng Tan, Navid Ali Khan, Abdalla Hassan Ghariband Khor Jia Yun (2024). *Cybersecurity Measures for Logistics Industry Framework* (pp. 248-304).

www.irma-international.org/chapter/applications-of-blockchain-technology-in-supply-chain-management/339253